# ASTRONOMY LIBRARIAN – QUO VADIS?

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**Abstract.** "You don't look like a librarian" is a phrase we often hear in the astronomy department or observatory library. Astronomy librarians are a breed apart, and are taking on new and non-traditional roles as information technology evolves. This talk will explore the future of librarians and librarianship through the lens of some of the recent talks given at the sixth "Libraries and Information Services in Astronomy" conference held in Pune, India in February 2010. We will explore the librarian's universe, illustrating how librarians use new technologies to perform such tasks as bibliometrics, how we are re-fashioning our library spaces in an increasingly digital world and how we are confronting the brave new world of Open Access, to name but a few topics.

## 1. Introduction

"You don't look like a librarian" is a phrase we hear so often that Ruth Kneale, systems librarian at the National Solar Observatory, decided to write a book with this title (Kneale 2009), after so many years of blogging on the issues surrounding this phrase with frequent regularity[1]. Our popular culture is fascinated by the image of the librarian. An advertisement for a Sony ebook reader states "Sexier than a librarian." Noah Wyle plays a librarian who goes on several Indiana-Jones-type adventures in a series of

[1] http://desertlibrarian.blogspot.com

made-for-TV-movies. And, last but not least, a long time ago in a galaxy far far away, there is even a Jedi librarian with whom Obi Wan Kenobi himself has a mild altercation over the existence of some astronomical data in the archive. Unfortunately, many of these portrayals, paradoxically even the "futuristic" ones, make librarians seem out-of-touch with modern technology and modern culture.

These entertaining portrayals aside, real librarians in astronomy libraries in all corners of the world are doing innovative and critical work to support the missions of the organizations they serve. To explore them, we will take a look at astronomy librarianship through the lens of some of the issues and projects discussed at the recent "Libraries and Information Services in Astronomy (LISA) VI" conference held in Pune, India at the Inter-University Centre for Astronomy and Astrophysics in February 2010. Excellent histories of the LISA conferences by Brenda Corbin and Uta Grothkopf may be found in Volume 7 of the Organizations and Strategies in Astronomy series and in the proceedings of the fifth LISA conference[2] (Corbin 2006 & Grothkopf 2007). Videos of many of the talks may be seen on the LISA VI website[3]. The proceedings of the conference will be published by the Astronomical Society of the Pacific Conference Series. Finally, we will conclude with further thoughts and observations about the image of librarians today and what it may mean for the future.

## 2. The LISA VI Conference

Astronomy librarians, appropriately, are a very international and diverse crowd. More than 90 participants from more than 18 countries attended LISA VI. The theme of the conference was "21st Century Astronomy Librarianship: From New Ideas to Action" and the six major topics discussed were: *The Future of Librarianship*, *Metrics*, *Open Access*, *Data Curation and Preservation*, *Virtual Communities* and *Use and Access*. While taking the reader on a tour of the highlights of the "official" themes, we will explore some of the subcurrents running through the presentations that describe the constant adaptation and evolution of astronomy librarians and the diverse ways they serve their local communities. These examples, in no way, represent all that librarians do, but rather a subset of interesting and successful projects.

[2]`http://www.eso.org/sci/libraries/lisa.html`
[3]`http://libibm.iucaa.ernet.in/conf/index.php/LISA/conf`

### 2.1. THE FUTURE OF LIBRARIANSHIP

Discussions on the future of librarianship focus on the new and emerging roles that librarians play within the knowledge spheres of their organizations. In addition, they grapple with the role of the print collection in an increasingly electronic environment. Managing both print and online collections simultaneously with a matrix of heterogeneous user expectations and the re-envisioning of the library as a place are two subcurrents that run throughout these discussions.

Advice on managing change, both practical and psychological, was offered by Jane Holmquist, librarian at Princeton University. Departmental science library collections at Princeton have been merged and housed in a new state-of-the-art building designed by Frank Gehry. Jane's situation is becoming more prevalent as universities centralize services. Librarians from the Universities of Oslo and Helsinki are also managing change brought about by similar consolidations within their local academic cultures.

Jill Lagerstrom's poster on "If it's not on the web it must not exist" used the opportunity of a major renovation at the Space Telescope Science Institute to find out how much of the print collection is available online, and how much is indexed by the ADS.

The frontier of "E-science" is being explored by librarians. Lee Pedersen of Brown University chronicled her conversations with faculty about the storage, dissemination, manipulation, protection and publication of the data generated by their research.

Librarians are increasingly involved in "Communicating astronomy with the public." Francesca Brunetti, of the INAF Osservatorio Astrofisico di Arcetri, argued that librarians provide the right mix of skills for this task: scientific authority and accuracy to the public, and the ability to deal with people of different ages, skills and heterogeneous educational backgrounds.

### 2.2. METRICS

Librarians use publication statistics to analyze the scientific productivity and impact of their organizations, scientific instruments (such as telescopes), groups of people, topics/subjects or even individual scientists. The managers of the organizations that we serve need this information for decision-making purposes and to show funding agencies that money has been put to good use. Fortunately, methods have been developed to construct these metrics efficiently and wisely, and librarians are well versed in their practice. Discussion surrounding this topic deals not only with metrics projects and methods, but also with the shortcomings of information products (journal websites, ADS, Web of Science) when it comes to performing

tasks such as these, which need to be done as accurately and systematically as possible.

Christopher Erdmann at the ESO Library has developed two software tools, FUSE and telbib, to manage the workflow specific to constructing bibliographies for citation analysis. FUSE is a full-text searching utility which has features more sophisticated than any publisher's website. Telbib is a content management system that generates next-generation bibliometric statistics.

Eva Isaksson looked at how departmental mergers at the University of Helsinki have affected productivity and impact statistics using the ISI citation database. When an astronomy department merges with a physics department, does this affect the measure of the department's overall performance?

Nishtha Anilkumar examined the types of research used by doctoral students in their theses at the Physical Research Laboratory in Ahmedabad, India. Longitudinal statistics on the use of Open Access materials, non-subscribed journals, and e-prints paint a revealing portrait of the research landscape and how it evolves over time. This type of analysis can reveal gaps in the library's collections.

### 2.3. OPEN ACCESS

The Open Access movement promotes the idea that scholarly works (most usually journal articles) should be freely accessible to everyone. Librarians have, in general, been vocal advocates of this idea, which comes in a variety of economic models and paradigms, because we are the ones who get the bills for the journals and often are forced to cancel access to journals as our budgets shrink. According to *Library Journal's* periodicals price survey[4], the average cost of an astronomy journal has been increasing at a rate of 8 to 10% each year, certainly far higher than the rate of inflation. Astronomers have historically been early adopters of many aspects of Open Access: they deposit e-prints in astro-ph and the major society journals make articles freely available after two years. They are also accustomed to page charges, whereby the author shares the cost of publishing.

To further complicate matters, the U.S. Office of Science and Technology Policy has recommended that the version of record of federally funded research be made freely available within one year of publication. Terry Mahoney, scientific editor at the Instituto de Astrofísica de Canarias, asked the question "Is Open Access Right for Astronomy?" Of course, the answer is neither a simple "yes" or "no." Terry took a refreshingly critical look at the economic realities of Open Access in the complex and hetero-

[4]http://www.libraryjournal.com/article/CA6547086.html

geneous world of astronomical publishing. Joe Jensen, managing editor of the Astronomical Society of the Pacific Conference Series also goes beyond the rhetoric to spell out what Open Access means specifically for society conference proceedings. Terry and Joe both reminded the audience that "there's no such thing as a free lunch" and that there is no one-size-fits-all solution as scholarly publishers confront Open Access.

For M.N. Nagaraj at the Raman Research Institute Library, Open Access is not just about journals. They have created an open digital repository of physics and astronomy theses created at their institution. Before the advent of electronic communication, theses, in particular, were often prohibitively difficult to obtain. A free repository is most welcome. However, these digital repositories don't just "create themselves" and bring with them a host of complex issues, such as determining the best scanning methods, getting permissions and establishing metadata standards.

### 2.4. DATA CURATION AND PRESERVATION

The curation and preservation of data raise many unanswered questions. What is the shelf life of digital data? What does it cost to make data free? How can we cooperate and collaborate better to answer these questions?

Copyright is perhaps the most complex issue for archivists who want to make the electronic documents in their collections freely available and use the web to promote their institutions. Christina Birdie at the Indian Institute of Astrophysics is confronting the challenge of balancing the need to disseminate information freely with the rights of authors under the law. Unpublished works are particularly difficult to manage.

According to Andras Holl, librarians at small observatories must be involved in the team responsible for constructing, managing and ensuring access to local data archives. He outlines a plan with guidelines for the Konkoly Observatory to establish such a data archive.

### 2.5. VIRTUAL COMMUNITIES

Virtual tools facilitate communication and collaboration across global networks. Librarians make use of these tools to build communities.

Leila Fernandez participates in a virtual community to engage the public with astronomy at the University of Toronto. An interactive chat facility combined with live viewing of telescope images enable a virtual community to participate in astronomical activities to which they would not normally have access. Participants from the southern hemisphere are able to view portions of the sky not normally visible to them. Groups such as bilingual people and First Nations Communities are targeted participants in this outreach program.

Social networking is best known to us as Facebook and Twitter. However, a host of book social network sites, such as LibraryThing and Shelfari, have also emerged. Francesca Martines, of the INAF Osservatorio Astronomico di Palermo, evaluated these with a librarian's bibliographic eye and contemplated their use in the astronomy library. Librarians often evangelize interesting new technologies to their local users.

Alberto Accommazzi, ADS Project Manager, sees the ADS as a sort of virtual community, a collection of heterogeneous knowledge products interlinked with the ADS as a node. In order to take advantage of powerful web architectures, though, we need to structure our data accordingly. Alberto calls on us to do this so that we can fully collaborate, share and uncover networks of communication.

### 2.6. USE AND ACCESS

Librarians study their communities and attempt to understand their local users' specific needs. A good librarian is familiar with the culture not just of the specialized field she supports, but of her local institution as well. She is also familiar with the marketplace of new and emerging information products. Librarians seek the best products for their users with the intent of using library funds effectively and saving the user time.

Electronic books are an example where librarians are waiting for the future to happen. Molly White, at the University of Texas at Austin, surveyed her astronomy faculty to reveal their attitudes toward the ebooks available to them through the library. When asked if they prefer ebooks to print books, the responses were mixed. The answer was a resounding "sort of."

Open source library catalogs have entered the marketplace. Uta Grothkopf, of the ESO Library, has become frustrated because commercial proprietary library catalog software is constantly behind the technological times. Investigating open-source alternatives gives her greater flexibility and allows her to configure these tools to provide her users with twenty-first century research capabilities. Uta evaluated the features of various open source catalogs and shared her experience with her endeavour to adopt an open source product in a small library.

Hemant Kumar Sahu of the Inter-University Centre for Astronomy and Astrophysics researched the specific information-seeking behaviors of astronomers and astrophysicists by using a questionnaire to learn about their use of books, online catalogs, print materials and online journals. With the gathered statistics, Sahu can paint a picture of the impact of Information and Communication Technology on the information-seeking behavior of Indian astronomers and astrophysicists. This picture can be used to inform

strategic planning initiatives for the library's infrastructure.

## 3. Conclusions

### 3.1. SUBCURRENTS

While there were six official themes to the talks at the LISA VI conference, many subcurrents can be found throughout such as:

- Playing active roles in supporting the communication of astronomy to the public
- Demonstrating the value of the intellectual output of their organizations through bibliometrics
- Pro-actively making local knowledge products freely available
- Becoming more user-centered and less library-centered
- Refocusing on the library as a place
- Exploring the frontier of e-science and data archives

### 3.2. WHAT'S IN A NAME?

Will librarians remain librarians? Last year, our trade organization, the Special Libraries Association, voted on whether to change its name to the "Association of Strategic Knowledge Professionals." The discussion surrounding this topic was very charged, indeed. The leadership of the organization was concerned that the term "librarian" was a liability. While there were many members who were not necessarily attached to the name, which has been in use for 100 years, the result was that the name change was voted down. The word "libraries" has received some attention in the educational sphere as well. One-third of library schools have become "iSchools." A new type of knowledge worker that has grown out of librarianship is called the "informationist." These new professionals, who primarily provide research assistance, came into existence in the context of clinical care and biomedical research. Informationists receive specialized training in their subject areas that goes beyond "on-the-job" learning. Programs in informatics are popping up in universities with library curricula and have expanded beyond the biomedical to include fields such as chemistry and even music. "Embedded" librarianship describes a set of practices librarians are adopting to get out of their offices and out from behind their desks. Since more patrons are using online information, we do not see them as often and this is an effective way of making sure our services are visible. As librarians' roles evolve, along with our names in some cases, our traditional values of preservation and access to information remain.

### 3.3. THIS BOOK IS OVERDUE

Marilyn Johnson, in her recent book *This Book is Overdue! How Librarians and Cybrarians Can Save Us All* (Johnson 2010) makes the case that, despite ongoing technological advances, there will always be a need for human help. Librarians must continue to be advocates for their users, or, as a reviewer of this book puts it, "pragmatic idealists who fuse the tools of the digital age with their love for the written word and the enduring values of free speech, open access, and scout-badge-quality assistance to anyone in need[5]."

### 3.4. WHERE ARE WE GOING?

The title of this paper asks of the astronomy librarian *"Quo Vadis?"* which in Latin means "Where are you going?" The answer, that we hope has become apparent from the many subcurrents running through the talks at the LISA VI conference, is "we go where the information goes" and "we go where our users go." Our good faith, however, may not be enough. Terry Mahoney's Declaration concerning the evolving role of libraries in research centres warns us of the "increasing invisibility of research libraries vis-à-vis recent accelerated changes in publishing and reader-access technology" and calls on librarians to "adopt a more proactive stance in making their contribution known to the research communities they serve." (Mahoney 2007) Hopefully, recent efforts to combat the image of the librarian as antiquated and out-of-touch will help us to demonstrate that we are vital parts of the organizations we serve.

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[5]http://www.harpercollins.com/books/9780061431609/This_Book_Is_Overdue/index.aspx